Appendix A

Appendix A

Representative claim 1 of the '468 patent:

1. A computerized system for manipulating data sets, comprising:

a processor; and

a data repository, the data repository being adapted to process, retrieve, and store data contained in the data sets and one or more layers of metadata of the data in the data sets, comprising:

an element module configured to store and uniquely identify a plurality of elements, wherein each of the elements is identified by a unique element identification;

an element relation module configured to store one or more relationships between the elements in the element module;

a class module configured to define at least one class of the elements and store the class;

an attribute module configured to define one or more attributes and store the attributes;

a class attribute module configured to define and store one or more class-attribute associations between at least one of the attributes and the class;

a type definition module configured to define and store one or more types of the class, the attributes related to the class, and the relationships between the elements;

a state machine module configured to store one or more state machine types associated with at least one of the elements; and

a status module configured to store one or more statuses of each state machine.

Representative claim 1 of the '585 patent:

1. A computerized system for manipulating data sets, the computerized system comprising:
a hardware-based processor; and
a data repository adapted to process, retrieve, and store:
data contained in the data sets; and
one or more layers of metadata included in the data sets,
wherein the data repository comprises:
an element module configured to store and identify a plurality of elements, wherein the plurality of elements are identified by unique element identification;
an element relation module configured to store one or more relationships among the plurality of elements stored in the element module;
a class module configured to define at least one class of the plurality of elements and store the at least one class;
an attribute module configured to define one or more attributes and store the one or more attributes;
a class attribute module configured to define and store one or more class-attribute associations between at least one of the one or more attributes and the at least one class;
a type definition module configured to define and store one or more types of the at least one class, a plurality of attributes related to the at least one class and the one or more relationships among the plurality of elements;
a named text module configured to store textual representations of query, control, and display mechanisms that relate to the plurality of elements, wherein the named text module defines one or more folders and one or more filters; and
a tuple module configured to generate and store one or more tuples, wherein the one or more tuples link the one or more folders and the one or more filters to generate a hierarchy of one or more data entries.

Representative claim 1 of the '855 patent:

1. A computerized system for manipulating data sets, comprising:

a hardware-based processor; and

a data repository that contains the data sets and one or more layers of metadata of the data in the data sets, comprising:

a class module configured to define at least one class of elements and store the class;

an attribute module configured to define one or more attributes and store the attributes;

a class attribute module configured to define and store one or more class-attribute associations between at least one of the attributes and the class;

an element attribute module for the at least one class configured to:

define and store the attributes of the elements in the class; and

transmit the attributes and the elements;

an element module configured to receive the transmitted attributes and elements from the element attribute module, store the attributes and elements, and uniquely identify the elements, wherein the elements are identified by unique element identifications;

an element relation module configured to store one or more relationships between the elements in the element module;

an element history module configured to store one or more indicators of a modification to the elements; and

an element document module configured to store formatting data for grouping a subset of the elements.

Appendix B

Appendix B

Claimed Module	Exemplary Description	Exemplary Citations
Class Module	Defines and "store[s] attributes of elements in a class"	D.I. 1-A at Abstract, *see also id.* at 2:4-5, claim 1
Attribute Module	"[D]efine[s] and store[s] the attributes"	D.I. 1-A at 2:5-13; *see also id.* at 5:1-17, claim 1
Class Attribute Module	"[D]efine[s] and store[s] one or more class-attribute associations between" attribute(s) and class(es)	D.I. 1-A at 2:5-13; *see also id.* at 5:1-38, claim 1
Element Module	"[S]tore[s] and uniquely identif[ies] elements"	D.I. 1-A at Abstract; *see also id.* at 1:65-2:1, 5:67-6:21, claim 1
Element Relation Module	"[S]tore[s] relationships between the elements in the element module"	D.I. 1-A at Abstract; *see also id.* at 2:1-3, 6:30-40, claim 1
Type Definition Module	"[D]efine[s] and store[s] one or more types of the class, the attributes related to the class, and the relationships between the elements"	D.I. 1-A at 2:5-13; *see also id.* at Abstract, claim 1
State Machine Module	"[S]tore[s] one or more state machine types associated with at least one of the elements"	D.I. 1-A at claim 1; *see also id.* at Abstract, 7:59-8:3
Status Module	"[S]tore[s] one or more statuses of each state machine"	D.I. 1-A at claim 1; *see also id.* at Abstract, 7:59-8:3
Named Text Module	"[S]tore[s] textual representations of query, control and display mechanisms that relate to the plurality of elements" and "defines one or more	D.I. 1-B at claim 1; D.I. 1-A at 10:5-23, 10:41-58, claim 6

Claimed Module	Exemplary Description	Exemplary Citations
	folders and one or more filters"	
Tuple Module	"[G]enerate[s] and store[s] one or more tuples"	D.I. 1-B at claim 1; *see also* D.I. 1-A at 10:24-58, claim 7
Element Attribute Module	"[D]efine[s] and store[s] the attributes of the elements in the class" and "transmit[s] the attributes and the elements"	D.I. 1-C at claim 1; *see also* D.I. 1-A at claim 9, 6:41-52
Element Document Module	"[S]tore[s] formatting data for grouping a subset of elements"	D.I. 1-C at claim 1; *see also* D.I. 1-A at 6:66-7:6, claim 11; D.I. 1-B at claim 13
Element History Module	"[S]tore[s] one or more indicators of a modification to the elements"	D.I. 1-C at claim 1; *see also* D.I. 1-A at 6:53-65, claim 10; D.I. 1-B at claim 12